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14. ABSTRACT The purpose of this three-year study is to: 1) implement a computerized database to track the fatness and physical performance of Reservists assigned to the 94th RRC and 804th Medical Brigade, 2) provide the 94th RRC and 804th Medical Brigade with an environmental/internet-based intervention to increase health risk communication and promote healthy body weight/fatness and physical performance, 3) monitor the fatness and physical performance of the Reservists for two years following a one-year baseline period to evaluate the efficacy of the intervention, and 4) evaluate consumer satisfaction with the intervention.					
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Introduction:

The primary aims of this study are to: 1) implement a computerized database to track the fatness and physical performance of Reservists assigned to the 94th Regional Readiness Command (RRC). 2) Provide the New England Reserve Units with an environmental/Internet based intervention to increase health risk communication and promote healthy body weight/fatness and physical performance, 3) monitor the fatness and physical performance of the Reservists for two years following a one-year baseline period to evaluate the efficacy of the intervention, and 4) evaluate consumer satisfaction with the intervention.

The study was originally designed to be three years in duration. During the first year the H.E.A.L.T.H. website would be created and baseline data would be collected. The second and third years the website would be disseminated and study data would be collected. However, we were able to obtain two years of baseline data prior to disseminating the website. In addition, we will have one final year for data summary and manuscript preparation. Therefore, the study has become a five year study that will allow for a longer baseline and time devoted for post-intervention scholarly activities. More detail on these issues is provided below.

Body:

This project delivers a weight measurement system for Army Reserve soldiers in the 94th Regional Readiness Command (RRC) and an Internet-based intervention for assisting soldiers' adherence to body weight and physical fitness standards described in AR 600-9. The Internet-based program, called H.E.A.L.T.H. (Healthy Eating, Activity, and Lifestyle Training Headquarters), is integrated with an environmental health promotion program that uses the command structure and existing communication functions to promote the use of the internet-

based intervention. This approach can be viewed as a population-based health promotion program that will be integrated into existing programs that are designed to assist overweight or unfit soldiers, e.g., the Fit, Fight for Life (3FL) program (formerly Wounded to Warrior program). Pennington Biomedical Research Center (PBRC) personnel work closely with an Executive Committee to guide this research project. During the first year, the primary objectives were: 1) collection of baseline data from the Army Physical Fitness Test (APFT), i.e., height, weight, fatness estimates, and measures of fitness, 2) assess the unique health risk communication, weight management, and fitness needs of the New England Reserve Units, and 3) development of the H.E.A.L.T.H. intervention for implementation in Years 2 and 3. During Years 2 and 3, the primary objectives are: 1) implementation of the H.E.A.L.T.H. intervention, 2) collection of data on height, weight, fatness, and fitness to evaluate the effectiveness of the H.E.A.L.T.H. intervention, and 3) analysis of the data and dissemination of the results.

However, as stated above the timeline of the project has been extended (See Appendix A). During the first two years we were able to 1) collect data, 2) assess risk, and 3) develop the intervention. Therefore, during Years 3 and 4, we will 1) implement the H.E.A.L.T.H. intervention and 2) collect data on height, weight, fatness, and fitness to evaluate the effectiveness of the H.E.A.L.T.H. intervention. In year five, we will 3) analyze the data and disseminate the results. We are embarking on the third year of the project.

APFT data. The first study aim indicates that we are to implement a computerized database to track fitness and physical performance of Reservists. However, the Reservists already have this tracking system contained within the Regional Level Applications Software (RLAS). In December, 2006, we extracted APFT scores from the Regional Level Applications Software (RLAS). In the previous report, we provided data on the soldiers from January 1 to December

31, 2005. The most current extraction provided additional data from January 1st to December 31st of 2006. There was a total of 4207 APFT records for 1253 different soldiers (85% men). The pass-fail data for the 4207 records are found in Table 1. These data show that there is a population of at least 10% of Reservists for whom the website would be directly useful in assisting them in losing weight.

Table 1. Weight and body fat percent measurement for Reservists in years 2005-2006.

	Records	Passed Screening Weight	Taped/Passed	Taped/Failed	Missing
Women	624	57.7%	26.4%	9.6%	6.3%
Men	3583	58.8%	27.2%	10%	4%
Total	4207	58.7%	27.1%	9.9%	4.4%

Data were also obtained from the APFT. Table 2 shows APFT scores by gender. The average APFT score for men and women is very similar, 211.2 (47.4) and 214.2 (50.4) respectively. The average APFT score was above the minimal standard for fitness. Table 3 presents the pass-fail rate. The pass-fail ratio (58:42) is similar for both genders, indicating that approximately 40% of records have a failing score. Therefore, there are a large number of soldiers for whom the website could be used to assist with passing the APFT.

Table 2. APFT test total scores by gender for Reservists in years 2005-2006.

	Records	Mean	Std. Dev	Min	Max
Women	363	214.2	50.4	0	300
Men	2069	211.2	47.4	0	300
Total	2432	211.6	47.9	0	300

Table 3. APFT test pass:fail rate by gender for Reservists in years 2005-2006.

	Records	Passed All	Failed At Least Once
Women	363	58.4%	41.6%
Men	2069	58.8%	41.2%
Total	2432	58.7%	41.3%

HEALTH Website. Since the last report in September, 2006, we provided the H.E.A.L.T.H. website to the 94th RRC. In the previous report, we indicated that we were making adaptations to the website to make it more applicable to Reservists. These changes included providing information related to the impact of weather on exercise activities, incorporating a New England leisure section, and improvements to the time management and family modules. All of these changes have occurred. There are currently articles on hypothermia and exercising in cold temperatures; the New England leisure section provides information on recreational facilities available to the soldiers by state; the time management section has been broadened to include more topics and tools; and the family module now includes information on how families can help soldiers make healthy dietary and physical activity choices. The website became available to the commands on April 1, 2007. On April 14 and 15 we conducted a formal launch ceremony at the 94th RRC HQ. By providing the commands with the H.E.A.L.T.H. website, we have achieved the second study aim of the study: provide the Reservists with an environmental health promotion intervention.

Promotion. Our second focus since the last report was to promote the program and its use. Extensive travel by PBRC staff has been made in order for our promotion efforts to take effect

(see Appendix B). This process began in late 2006 by holding focus groups with soldiers and visiting the units to inform them of the upcoming website. During this time we communicated with the 94th RRC command staff, commanders of individual units, soldiers, the 94th RRC family readiness group, the Public Affairs Office (PAO) office, and decided upon appropriate promotional items. As mentioned in the previous report, our promotion plan centered on utilizing “liaisons” within each unit to inform soldiers about the program and to deliver promotional items. The liaisons were designated during the pre-launch months and their responsibilities were specifically defined.

During this period, we learned that the 804th MED BDE was not interested in participating in the program. Therefore, in February of 2007, we did not provide this unit with the H.E.A.L.T.H. website. From that point on, all efforts have been focused on providing the website to the 94th RRC.

Following the launch of the website, our promotion plan was enacted. It soon became clear that the liaison approach was being met with varying levels of success. Therefore, it became imperative that PBRC staff in New England (Mr. Bob Spera and Mr. Lorenzo Sordoni) take a more proactive role in promotion, meaning that they would be responsible for creating opportunities to promote the website while maintaining contact with liaisons. Further strategies to promote the website were developed, including attending the Soldier Readiness Program (SRP), setting up face-to-face liaison trainings, and being present when large numbers of soldiers would be in attendance at a facility. In addition, when internet access is available, a key strategy has been to guide both liaisons as well as soldiers through the registration process on the website. To date, 35 of the 58 units under the 94th RRC (60%) have been visited. It is estimated that 1120 of 2853 (39%) soldiers within the 94th RRC have been exposed to the website. Our goal is to

have 100% of the units under the 94th RRC be exposed to the website by year end. This will require the efforts of both PBRC staff in New England and the liaisons.

Website usage.

To date, 352 soldiers have registered on the website. Future efforts will focus on delivering prompts to soldiers in order to increase the likelihood of regular usage. Currently, we have the capability of sending all soldiers within the 94th emails via the 94th intranet. Therefore, our prompts will take the form of email newsletters containing updates on the website, health information, and other pertinent information that will direct soldiers to the website.

The majority of the soldiers using the website are white (70%) and are equally dispersed across education levels. Most soldiers who have registered on the website are combat support services, have more than 10 years experience in the military, and about 33% are of the NCO rank. To date, only 22 civilians have registered on the website. Consistent with the fourth aim of the study, we have evaluating consumer satisfaction. Those using the website report high levels of satisfaction with the interactive components, navigation and accessibility, and design and layout, and the site overall (See Table 4). Future promotion efforts will be, in part, based on ways to find and/or create more opportunities to make contact with family members.

Table 4. Data from the user satisfaction questionnaire.

Question#	Question	Average Soldier Score	Average Civilian Score
1	The website was easy to use ("user-friendly")	4.65	6
2	The website was personalized. It provided customized feedback to me.	4.74	6
3	The website was useful and helped me in my attempts to improve my health.	4.81	6.5
4	I felt confused while using the website.	3.49	2
5	I felt lost while looking for information	3.43	2
6	The use of graphics on the website helped me track my progress at changing my habits.	4.38	6
7	Did you find that creating an account on the website was helpful?	4.55	6.5
8	The website was well organized.	4.68	6
9	The website was easy to move around in.	4.67	6
10	The links were helpful.	4.65	6
11	The instructions on the website were clear.	4.71	6
12	Graphics and charts were attractive and visually pleasing.	4.87	6
13	Text was presented in a simple and straightforward way.	4.82	6
14	The website was easy to read.	4.85	6

Note. Questions 1-3 and 8-14 are scored on a rating scale of 1 (Strongly Agree) to 7 (Strongly Disagree). Questions 4-7 are scored on a rating scale of 1 (Never) to 7 (Always). Questions 4 and 5 (highlighted) are reverse scored.

We are currently working with a number of individuals within the 94th RRC in order to promote the program. LTC Jack Sherman is employed in the 94th RRC's Human Resources Department at the 94th RRC Headquarters, and thus, he is onsite five days per week. In addition, LTC Sherman is a member of the 94th RRC. He has been instrumental in providing us with contact information for other key personnel within the 94th. We are also working closely with Linda Jelenewski in the Public Affairs Office of the 94th RRC. In June 2007, the PAO office published an article on the website that was distributed to all 94th RRC personnel electronically. Several of the 94th RRC Command Staff, namely COL Timothy O'Brien, CWO Patrick Nelligan, CSM Michael Bolduc, and LT Lynette Austin have also been of great assistance with buy-in, providing us names of liaisons, and working to bring the H.E.A.L.T.H. program in line with the

Fit, Fight for Life program (3FL), respectively. The 3FL is the 94th's program to assist overweight soldiers attain a healthy weight.

BRAC. The Base Realignment and Closure (BRAC) listing will affect the 94th RRC beginning October 2007. Over the next year, the 94th RRC will gradually dissolve until September 31, 2008, at which time the 94th RRC will cease to exist. The 94th RRC and its subordinate units will subsequently be dispersed into multiple new commands, not all of which are within the New England region. Available information suggests that at least 30% of this current population could be lost, or become invisible to the Army H.E.A.L.T.H. intervention.

Approximately 70% of the soldiers currently in the 94th RRC will become a part of either the 655th or 302nd commands. We have taken action in developing a plan to ensure that the current population of the 94th RRC remains exposed to the Army H.E.A.L.T.H. intervention. In August 2007 PBRC staff met with COL Steve Falcone and COL Timothy Waters who will be commanding the 655th and 302nd respectively. During these meetings, we obtained their support to continue the H.E.A.L.T.H. program within their units. In addition, promotion strategies, RLAS data extraction, website access, and related issues were discussed. At the present time, only the logistics of how these will occur remain to be resolved.

Key Research Accomplishments:

- Launched website on schedule on April 1, 2007
- Adapted website to fit specific needs of the New England Reservists
- Several hundred soldiers have registered on the website
- Obtained support of 94th upper chain of command
- Implemented a promotional plan utilizing liaisons & PBRC staff in New England
- APFT RLAS test data collected for 2005-2006

- APFT RLAS data analyzed
- Site visits to New England to promote website
- Meetings and travel details are highlighted in Appendix B

Reportable Outcomes:

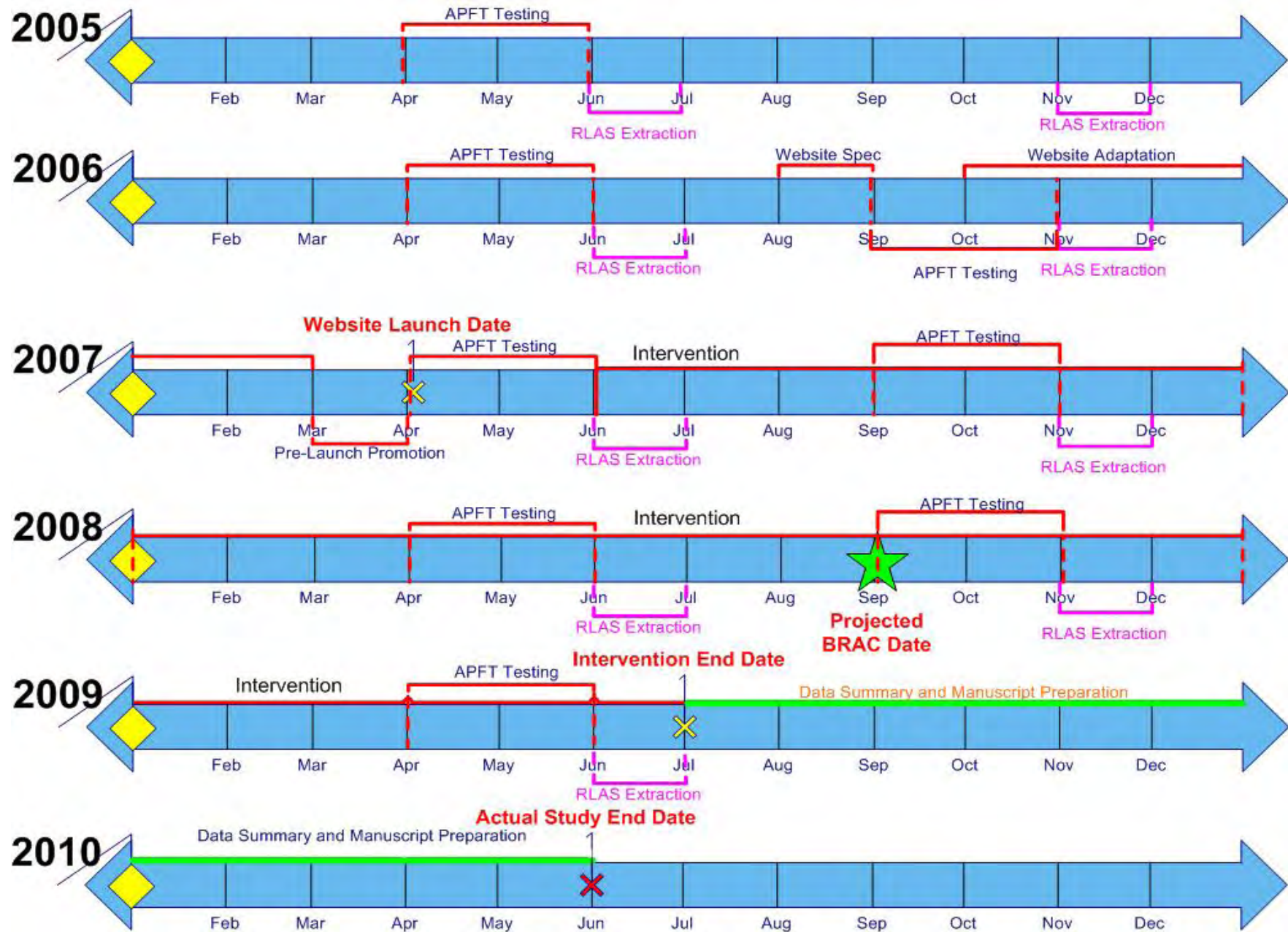
The main reportable outcome is that we were able to obtain another year of APFT data from the RLAS system. This means that we now have two years of baseline data on over 1000 soldiers. The data show that there is a large number of soldiers for whom the website can assist them in losing weight, losing body fat, or passing the APFT.

Conclusions:

There are two primary tasks for the next year. First, we must ensure that all soldiers have registered onto the website. Second, we need to begin to have a larger number of soldiers use the website on a regular basis. We will continue to promote the website utilizing liaisons and PBRC staff in New England. In order to facilitate this process, we are going to hire another staff member to work in the New England area and provide oversight for current staff. In addition, we will begin the prompting program for the Reservists. The main component of this prompting program consists of a series of regular email prompts (e.g. newsletter illustrating new website features or local fitness events) that will draw the soldiers' attention to the website. We will continue to collect RLAS data in December and June of each remaining year (see Study Timeline in Appendix A). The data are obtained at these times because they follow the main months of APFT dates for the Reservists (April through May and September and October). Website adaptation will continue throughout the duration of the program. Currently, the website has been adapted to improve functionality, include the new AR600-9 standards, a feedback feature, and an APFT trainer, among other adaptations. We have begun planning for the cluster

randomization study that was described in the application for funding (Weight Measurements and Standards for Soldiers--- Contract # W81XWH-05-2-0082). We have identified the Louisiana Reserve and Army National Guard who have provided verbal agreement to participate in the study. Finally, Dr. Corby Martin has extended the earlier work of Dr. Donald Williamson related to the digital photography method for objectively measuring food intake of soldiers in a free-living environment and it appears that he will receive federal funding to study innovative methods for collecting food intake, energy expenditure, and body weight data using remote data collection methods.

Appendix A Study Timeline



Appendix B
Summary of Travel

Date	Location	Travelers	Purpose
9/27/06	Boston/Devens	Robert L. Newton, Jr. Sandra May	Held focus groups with military personnel/reservists on the H.E.A.L.T.H. website for adaptation
12/10/06	Boston/Devens	Robert L. Newton, Jr. Matt McGucken Sandra May	Met with 94th RRC to disseminate information on Army study
1/5/07	Boston/Devens	Matt McGucken	Presentation to 94 th Ambassadors
2/23/07	Boston/Devens	Robert L. Newton, Jr. Matt McGucken	94 th Quarterly Leaders' Call
4/13/07	Boston/Devens	Robert L. Newton, Jr. Matt McGucken Donald Williamson	Launch website 94th
4/19/07	Boston/Devens	Robert L. Newton, Jr. Matt McGucken Donald Williamson	Presentation at USARIEM
6/26/07	Boston/Devens	Robert L. Newton, Jr. Matt McGucken	Follow-up visit for promotion of H.E.A.L.T.H. website
8/3/07	Boston/Devens	Robert L. Newton, Jr.	Attend FRG meeting to promote website
8/14/07	Boston/Devens	Matt McGucken Donald Williamson	Follow-up visit for promotion of H.E.A.L.T.H. website
8/21/07	Washington DC	Robert L. Newton, Jr. Matt McGucken Sandra May Donald Williamson Tiffany Stewart Ray Allen Guy LaVergne Melanie Spinks Donna Ryan Megan Franklin Bob Spera	Army Executive committee meeting
9/10/07	Boston/Devens	Robert L. Newton, Jr. Matt McGucken Donald Williamson	Interview for promotion coordinator position in New England